SECURITY NET
By Alex Salkever

Who's Protecting Our Infrastructure?

No one. Computer-security standards that would thwart hacker terrorism against utility, telecom, health-care, or power systems don't exist

Chris Wysopal, a computer-security expert, was scheduled to brief the Senate Governmental Affairs Committee in Washington, D.C., on Wednesday, Sept. 12. But when the Federal Aviation Administration grounded all national air travel after two hijacked planes struck the World Trade Center towers and a third set the Pentagon ablaze, Wysopal's appearance was postponed indefinitely.

His message, however, should not get drowned out in the din of war talk. A noted good-guy hacker and the research director of Web-security company @stake, Wysopal planned to deliver a candid assessment of how utilities, telecoms, and other critical national infrastructure providers protect their computer networks.

A HODGEPODGE. Wysopal's assessment? Much work remains to be done. While some critical infrastructure providers have rock-solid protections, all too many have neglected even the basic steps of encrypting databases, auditing their networks, and patching security holes on all their servers. When it comes to network security, "there need to be some minimum requirements," says Wysopal. "There are none now."

With major military action looming and the economy reeling, shoring up computer security among infrastructure providers might not seem a top priority. It would cost money, obviously, and might be inconvenient. Nevertheless, President George W. Bush should add the protection of infrastructure -- and the crucial computer systems that control it -- to the growing list of mandates under the rubric "Homeland Defense."

The very backbone of what makes America strong is the reliable provision of water, power, communications, and health care. Without these services, our ability to wage a war and to project power would be severely diminished. Furthermore, the disruptions to normal life unleashed if determined, malicious hacker-terrorists were successful

could could be disastrous.

A BIT SHOCKING. How shaky is the protection of the computer networks embedded in our critical national infrastructure? That's hard to tell right now. Says Wysopal, who has audited security at a number of infrastructure providers: "It varies across the board. I have seen some excellent security in some places and very poor in others."

That's about par for a field where no national standards have been developed. But it's a bit shocking considering what's at stake. Imagine the chaos that could ensue should a terrorist act of mass destruction be combined with induced power or telecom outages.

Obviously, cell phones played a crucial role in the aftermath of the New York disaster. For many, they were the only means of contact with the outside world. Yet earlier this summer, Verizon Wireless, the nation's largest cell-phone provider, encountered horrendous problems after someone hacked into a customer database and dumped credit-card records into various Internet chat rooms. Many security experts commented, in the wake of that incident, that Verizon should do a total security audit. In response, the company said it would vigorously investigate the issue and put in place preventive measures.

POROUS 911. Here's another truly terrifying tale from a man who should know -- Thomas Noonan, the CEO of Internet Security Systems. One of the largest computer-security companies in the world, ISS builds software and sells protection services. That makes Noonan a personal target for nefarious hackers. Small wonder a police officer shows up at his front door at least once a week in response to "calls" by hackers who break into the 911 system. "It's just their way of letting me know that they can find me if they want," says Noonan. It also means that the 911 system, a decentralized but critical part of the infrastructure, needs a major network security overhaul.

No question, the cost of bringing infrastructure providers' systems up to snuff could well stretch into the billions. But what's a few more billion, considering the types of spending the U.S. is now looking at in the name of Homeland Defense? Computer-security standards for critical companies could end up being well worth the cost.

Salkever covers computer security issues twice a month in his Security Net column, only on BW Online
Edited by Douglas Harbrecht

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Decision 01-05-027 May 3, 2001

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of Global Photon Systems, Inc. and Global West Network Inc. for authority to modify their Certificates of Public Convenience and Necessity to Permit Construction of Specific Telecommunications Facilities.	Application 00-06-002 (Filed June 2, 2000; Petition for Modification Filed April 6, 2001)

OPINION MODIFYING DECISION 00-11-037

A. Background

Global Photon Systems, Inc. and its subsidiary Global West Network, Inc. (collectively "Applicants") have filed a Petition for Modification of Decision (D.) 00-11-037 regarding construction of an undersea and land-based fiber optic telecommunications network (the "Project").[1] In granting authorization for the Project, Ordering Paragraph 4 of D.00-11-037 states that Applicants "shall obtain all necessary permits for the Project and shall file a petition to modify this order to obtain approval for any subsequent changes to the route or construction activities of the Project."

Applicants have filed this petition for modification because in the course of obtaining all permits necessary to construct the Project and conducting final review of conduit that Applicants intended to use, Applicants were required to

[1] The term "Project" is used here as defined in D.00-11-037 and in Application 00-06-002, which contains a detailed description of the route and construction activities for the proposed fiber optic network.

make a number of minor adjustments to the terrestrial portion of the route.[2] Applicants explain that these minor adjustments were necessitated by the permitting process of local governments and the discovery of blockages in existing conduit that they originally intended to use. Applicants contend that the route adjustments described in the petition are de minimis, will have no significant impact on the environment, and do not alter the Project as approved by D.00-11-037.

Applicants describe their uncertainty as to the necessity of the petition and state they have submitted it out of an abundance of caution. They would prefer that the Commission dismiss the petition and convert it to an informational filing. In the event the Commission determines the petition is indeed required, Applicants request expedited review of the petition to permit them to complete construction under the terms of local permits. The permits require construction to be completed by late May so that the Project does not interfere with public access to coastal areas during peak summer months.

Applicants submitted a motion to shorten the protest period for this petition and justified the request by noting there were no protests to the original application for construction of the Project and the issuance of local permits has already involved a public review process as required by law. The assigned administrative law judge granted the motion and shortened the response period to seven days after the filing of the petition.

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[2] The route is described in the Final Environmental Impact Report (FEIR) certified by the State Lands Commission as Lead Agency, and considered by this Commission as a Responsible Agency.

B. Requested Route Changes

The Petition for Modification explains that the route changes are caused by the unavailability of conduit space and blockages in existing conduit that were not known until the conduit was accessed. These conditions required Applicants to adjust certain terrestrial routes connecting the coastal landing sites for the undersea portion of the network with carrier Points of Presence (POPs) for interconnection with the public switched network. Applicants could either construct new facilities adjacent to those identified in the FEIR or they could identify available existing conduit on a different route that would still connect the landing site to the POP. For the most part, Applicants chose the latter option to minimize financial cost and environmental issues. Consequently, Applicants state that over 95 percent of the route adjustments lie within existing conduit. In a few instances, new construction is necessary due to blockages that preclude the use of existing conduit. According to Applicants, the new construction consists entirely of trenching and boring within existing city streets.

Applicants state that all necessary California Environmental Quality Act (CEQA) review on these minor route adjustments has been completed. The responsible agencies involved with local permitting have all concluded that the route adjustments would have no significant impact on the environment.

Three of the cities with terrestrial route adjustments, Manhattan Beach, Santa Barbara, and Morro Bay, incorporated additional CEQA review as part of their discretionary permitting process. In a fourth city, San Diego, the entire route is located in existing conduit and does not involve any new construction, so only ministerial permits were necessary. Finally, ministerial permits were necessary in Manhattan Beach and Los Angeles for two activities associated with route adjustments, namely placing fiber in existing conduit and limited trenching

and boring in city streets. Applicants contend that even if the permits in Manhattan Beach and Los Angeles were not ministerial, the route adjustments would be subject to categorical exemptions under CEQA because they involve minor alternation of existing facilities or replacement or reconstruction of existing structures.

The petition provides documentation of the permits issued by these cities in exhibits attached to the petition and concludes that all necessary CEQA review of the Project, including the minor route adjustments, has occurred. The cities, as Responsible Agencies, have conducted all additional environmental analysis required by CEQA for the route adjustments described in the petition. Where CEQA review was not conducted, such as in San Diego and Los Angeles, it is because the route changes are ministerial and CEQA does not apply, or they fall within a categorical exemption.

C. Discussion

We will not grant Applicants' request to dismiss the Petition for Modification as unnecessary. The specific language of D.00-11-037 required a petition for modification for any route changes, and indeed, the route has changed. Applicants have presented a petition containing the route change descriptions and maps, and they have obtained all permits as the original order required. We do not interpret their filing as superfluous or overly cautious. Rather, we commend Applicants for following our directions from the original order to the letter. Based on the documentation provided with the petition showing that Responsible Agencies have conducted all additional environmental analysis required by CEQA for the route adjustments, we will approve the Project changes provided in this petition.

Nevertheless, we will take this opportunity to revise the language in D.00-11-037 to direct Applicants to consult with our staff about the need for further modification of their Certificates of Public Convenience and Necessity (CPCNs). At the time we initially approved the Project in D.00-11-037, we were most concerned with route changes resulting from the uncertainty of the undersea portion of the route, particularly the portion through the Monterey Bay National Marine Sanctuary. At the time of our approval of the original application, federal approval for the northern undersea portion of the route through the Sanctuary was still pending. We were concerned that the undersea route could change substantially based on the federal review and permitting process. We wanted to ensure that any major route changes resulting from a revision of the undersea route would come to our attention. For this reason, D.00-11-037 required Applicants to file a petition to modify their CPCNs to alert us to these potential changes.

We now find that the language in our November order may have been too broad. The Commission is less concerned with minor route deviations along the terrestrial route that was fully reviewed in the FEIR. Therefore, we take this opportunity to clarify that further petitions for modification of D.00-11-037 may not be required under certain circumstances such as if they involve minor changes to the originally approved route, which have local and/or Responsible Agency permitting approval and are within the scope of the Project from the original FEIR. Rather, we will require Applicants to consult with our Energy Division environmental staff to determine whether Applicants need to file a request for modification of their CPCNs. If our staff are concerned that the changes merit more formal Commission review, they can require Applicants to file a new application for modification of their CPCNs.

Therefore, we will modify the language in the November order to clarify this future process. The ordering paragraph in D.00-11-037 currently states:

> 4. Applicants shall obtain all necessary permits for the Project and shall file a petition to modify this order to obtain approval for any subsequent changes to the route or construction activities of the Project.

We will modify this paragraph to state:

> Applicants shall obtain all necessary permits for the Project and shall consult with our Energy Division environmental staff regarding the need for modification of their CPCNs for minor route changes. If Commission staff is concerned that the changes merit more formal Commission review, staff can require Applicants to file a new application for modification of their CPCNs.

We will also replace the last sentence of the first paragraph on page 6 of the opinion with this same language.

This decision does not modify any other provisions of the November order. Applicants must still comply with the mitigation monitoring program adopted by the State Lands Commission in its FEIR, and they must still obtain all necessary permits for the Project. We remind applicants that one of the initial conditions of our approval was the requirement that they adhere to the mitigation measures from the original EIR, and this remains a requirement of their CPCN for the proposed route changes, proposed construction changes, and the entire Project. In addition, we direct Applicants to provide an updated mitigation monitoring plan to Energy Division environmental staff and to continue working with staff regarding appropriate mitigation monitoring measures for the Project.

This is an uncontested matter in which the Commission grants the relief requested. Accordingly, pursuant to Pub. Util. Code § 311(g)(2), the otherwise applicable 30-day period for public review and comment is waived.

Findings of Fact

1. Applicants filed a Petition for Modification as required in D.00-11-037 because Applicants have made minor adjustments to the route of the Project approved in that order.

2. The route changes result from the local permitting process and blockages in existing conduit.

3. Local permits require construction to be completed by late May to avoid interference with public coastal access during peak summer months.

4. All necessary CEQA review of the Project, including the route adjustments described in the petition, has occurred.

Conclusions of Law

1. D. 00-11-037 should be modified to authorize construction of the facilities along the route described by Applicants in their petition for modification.

2. Future minor route deviations along the originally approved route for this Project may not require an additional petition for modification of Applicants' CPCNs.

3. D.00-11-037 should be modified as described in this Order.

4. This order should be effective immediately to allow Applicants to complete construction according to the terms and conditions of local permits.

ORDER

IT IS ORDERED that:

1. The Petition for Modification of Decision (D.) 00-11-037 filed by Global Photon Systems, Inc. and Global West Network, Inc. is granted to the extent it requests modification of Applicants' existing Certificates of Public Convenience and Necessity (CPCNs).

2. Ordering Paragraph 4 of Decision 00-11-037 is modified to read as follows:

   4. Applicants shall obtain all necessary permits for the Project and shall consult with our Energy Division environmental staff regarding the need for modification of their CPCNs for minor route changes. If Commission staff is concerned that the changes merit more formal Commission review, staff can require Applicants to file a new application for modification of their CPCNs.

3. The last sentence of the first paragraph on page 6 of the opinion should be replaced with the same language in Ordering Paragraph 1 above.

4. We direct Applicants to provide an updated mitigation monitoring plan to Energy Division environmental staff and to continue working with staff regarding appropriate mitigation monitoring measures for the Project.

5. This proceeding is closed.

This order is effective today.

Dated May 3, 2001, at San Francisco, California.

LORETTA M. LYNCH
President
HENRY M. DUQUE
RICHARD A. BILAS
CARL W. WOOD
GEOFFREY F. BROWN
Commissioners

STATE OF CALIFORNIA — GRAY DAVIS, *Governor*

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

PAUL D. THAYER, *Executive Officer*
California Relay Service From TDD Phone 1-800-735-2922
from Voice Phone 1-800-735-2929

Contact Phone: (916) 574-1935
Contact FAX: (916) 574-1855

January 20, 2000

File Ref: 25454

Mr. James Tobin
Morrison & Foerster, LLP
Attorneys At Law
425 Market Street
San Francisco, California 94105-2482

Re: Global Photon

Dear Mr. Tobin:

I am writing as a follow-up to our phone conversation of yesterday afternoon pertaining to the above-referenced application submitted to the California State Lands Commission ("CSLC") by Global Photon System, Inc. ("Global Photon"). The application is for a right of way over certain tide and submerged lands of the State for installing and operating a fiber-optic telecommunications line. The purpose of this letter is to request additional information to assist staff in making a determination as to whether the project qualifies for a cost-free franchise under California Public Utilities Code ("PUC") Section 7901.

As we discussed, after review of applicable statutes, case law and administrative decisions, we have concluded that in order to qualify for a cost-free franchise over roads, highways and navigable waterways of the State pursuant to PUC 7901, the applicant must establish that it is a "telephone corporation" within the meaning of PUC Section 234, and that the facilities to be installed in the right-of-way will be utilized by the applicant in its capacity as a public utility for the purpose of furnishing telephone service to the public on a non-discriminatory basis. Further, we are not convinced that any provision of federal law, including Section 253 of the Communications Act, as amended (47 USC 253), obligates the State of California to extend the benefits of PUC 7901 to those providers who do not intend to use the facilities to furnish telecommunication services to the public on a common carrier basis.

Global Photon has submitted a CPCN issued by the California Public Utilities Commission ("CPUC") (Decision 98-11-073) authorizing Global Photon to operate as a

facilities-based inter-Local Access and Transport Area (LATA) and, to the extent authorized by Decision 94-09-065, intra-LATA telecommunications service. On the basis of the PUC decision, we have concluded that Global Photon is authorized to operate as a "telephone corporation" in California within the meaning of the Public Utilities Code, with respect to the conduct of activities authorized therein.

However, due to the fact that Global Photon secured its CPCN through the PUC's registration process, (referred to by the PUC as the "Simplified Application Process") it is unclear what facilities will be operated under authority of the CPCN. With reference to the application pending before the CSLC, we are requesting written clarification from your client, as to whether *the equipment and facilities to be located within the public lands will be operated by Global Photon as a public utility under authority of the CPCN for the purpose of providing telephone communication services to the public on a non-discriminatory basis.* Stated within the language of the Richfield decision (Richfield Oil Corporation v. Public Util. Com. (1960) 54 Cal.2d 419), will Global Photon's fiber-optic cable system and related equipment be "dedicated" to providing telephone service to the public.

On the other hand, if Global Photon intends to operate the cable system, or any portion thereof or capacity thereon, as a "private" rather than a common carrier, reserving the right to make individualized decisions as to whether and on what terms to furnish service, we would like to know this as well. Your client's response will assist us in further evaluating its qualifications to receive either a rent-based Right of Way Lease or a rent-free Permit pursuant to PUC 7901.

Please let us have your response at your earliest convenience. If you have any questions or comments, do not hesitate to contact me.

Sincerely,

Richard D. Nobles
Staff Counsel

cc: Tim Stamnitz

bcc: Paul Thayer
Robert L. Lynch
Hap Anderson
Barbara Dugal
Jack Rump

RECORDED AT THE REQUEST OF
AND WHEN RECORDED MAIL TO:
STATE OF CALIFORNIA
California State Lands Commission
Attn: Title Unit
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202
STATE OF CALIFORNIA
OFFICIAL BUSINESS
Document entitled to free recordation
pursuant to Government Code Section 27383

Counties: San Francisco, Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara

W 25454

PERMIT NO. PRC _____
PERMIT FOR TELEPHONE LINE RIGHT OF WAY
(PUB. RESOURCES CODE SECTION 6301; PUB. UTILITIES CODE SECTION 7901)

This Permit consists of this summary and the following attached and incorporated parts:

Section 1 Basic Provisions
Section 2 Special Provisions
Section 3 Description of Premises
Section 4 General Provisions

SECTION 1

BASIC PROVISIONS

THE STATE OF CALIFORNIA, hereinafter referred to as **Permittor** acting by and through the **CALIFORNIA STATE LANDS COMMISSION** (100 Howe Avenue, Suite 100-South, Sacramento, California 95825-8202), pursuant to Division 6 of the Public Resources Code and Title 2, Division 3 of the California Code of Regulations, and for consideration specified in this Permit, does hereby permit and authorize **GLOBAL PHOTON SYSTEMS, INC.**, hereinafter referred to as **Permittee**; to utilize that certain strip of land described in Section 3 of this Permit (hereinafter referred to as the "Premises") as hereinafter provided, subject to the reservations, terms, covenants and conditions of this Permit.

SECTION 4

GENERAL PROVISIONS-PUC 7901

1. **GENERAL**

These provisions are applicable to all leases, permits, rights-of-way, easements or licenses or other interests in real property conveyed by the State Lands Commission pursuant to Public Utilities Code section 7901 ("PUC § 7901"), which reads as follows: "Telegraph or telephone corporations may construct lines of telegraph or telephone lines along and upon any public road or highway, along or across any of the waters of lands within this State, and may erect poles, posts, piers, or abutments for supporting the insulators, wires, and other necessary fixtures of their lines, in such manner and at such points as not to incommode the public use of the road or highway or interrupt the navigation of the waters."

2. **CONSIDERATION : Non-monetary**

(a) Permittee has represented to Permittor that: (i) Permittee is a "telephone corporation" within the meaning of Public Utilities Code section 234, (ii) that the authorized improvements to be located within the right of way ("ROW") applied for herein constitute "telephone line" within the meaning of section 233 of the Public Utilities Code, (iii) Permittee is authorized to provide intrastate telephone services pursuant to Decision No. 98-11-073 issued by the California Public Utilities Commission, (iv) Permittee is authorized to handle interstate and international telecommunication traffic in accordance with 47 USC § 214, and (v) the authorized improvements will be operated by Permittee as a public utility for the purpose of providing telephone service to the public on a non-discriminatory basis. On the basis of the foregoing representations and the written materials submitted by Permittee in support of its application for a ROW permit, Permittor has determined that Permittee is entitled to a rent-free ROW for the authorized improvements pursuant to PUC § 7901. Permittor has further determined that the authorized improvements will not unreasonably interfere with the public use of the Premises or interrupt the navigation of the overlying waters if carried out in accordance with the terms, conditions and covenants of this Permit.

(b) Permittor shall have the right at any time, and from time to time, and upon reasonable prior notice to Permittee, to audit Permittee's books and records insofar as each pertain to the ownership, operation, and use of the facilities and equipment installed on the Premises; provided, however, that without reasonable cause regarding the continuing qualification to rent-free use of the Premises, audits hereunder shall not exceed one audit per calendar year. The purpose of the audit shall be to (i) verify that Permittee is continuing to furnish the requisite telephone and communications services necessary to qualify for a rent free right-of-way under PUC §7901; and (ii) ascertain whether Permittee is utilizing or applying the facilities for purposes or uses outside the scope of PUC § 70901. Permittee agrees to cooperate fully with the audit and within 20 business days after written request therefor, provide Permittor the following information and documentation: (i) current rate information and information regarding the terms and conditions under which service is being furnished on or over the facilities, and; (ii) the name, address and phone number of each person or entity denied service on, access to or capacity over the facilities, within the 12 month period immediately preceding the audit, and the reason(s) for denial; and (iii) true and correct copies of any contracts affecting a transfer of the ownership, operation or control of the facilities, or any portion thereof, including without limitation, conveyances, assignments

and subleases; and (iv) such other data, information and supporting documentation as Permittor may reasonably require to complete its audit.

3. BOUNDARIES

This Permit is not intended to establish the State's boundaries and is made without prejudice to either party regarding any boundary claims which may be asserted presently or in the future.

4. LAND USE

(a) General

This Permit shall apply to and authorize installation and operation of only such facilities and equipment as Permittee, acting in the capacity of a telephone utility, has dedicated to the purpose of providing telephone and related communications services to the public. Nothing contained in this Permit, nor the action of Permittor in granting this Permit, shall be construed as, or have the effect of, enlarging or broadening the scope of authorized uses granted under PUC § 7901. Permittee shall use the ROW Premises only for the purpose or purposes stated in this Permit and only for the operation and maintenance of the improvements expressly authorized in this Permit. Permittee shall commence use of the Premises within one hundred and twenty (120) days following receipt by Permittee of all necessary governmental permits or other entitlements for installation of the authorized improvements, provided however, this Permit shall lapse and be of no further force and effect if Permittee fails to commence construction of the authorized improvements within one year from the effective date of this Permit. Permittee shall notify Permittor within ten (10) days after commencing the construction of authorized improvements and within sixty (60) days after completing them. Permittee's discontinuance of such use for a continuos period of one (1) year shall be conclusively presumed to be an abandonment.

(b) Continuous Use

Permittee's use of the Premises shall be continuous from commencement of the Permit until its expiration or sooner termination.

(c) Repairs and Maintenance

Permittee shall, at its own expense, keep and maintain the Premises and all improvements in good order and repair and in safe condition. Permittor shall have no obligation for such repair and maintenance.

(d) Additions, Alterations and Removal

(1) Additions - No improvements other than those specifically authorized in this Permit shall be constructed or placed on the Premises by Permittee without the prior written consent of Permittor.

(2) Alteration or Removal - Except as provided under this Permit, no alteration or removal of improvements or natural features on the Premises shall be undertaken without the prior written consent of Permittor.

(e) Conservation

GLOBAL PHOTON SYSTEMS, INC.

November 28, 2000

By e-mail

Ms. Debra Malek
Conservation Policy and Planning Branch
National Marine Sanctuary Program, NOAA
1305 East-West Highway, 11th Floor
Silver Spring, MD 20910
Attention: Submarine Cable Federal Register Comments

Subj: Advance Notice of Proposed Rulemaking on Submarine Cables, published August 23, 2000

Dear Ms. Malek:

Global Photon would like to thank you for your efforts to review NOAA policies on submarine cables in Sanctuaries, and to help streamline and equalize the review processes. We hope that you will realize that the Sanctuary Program and the Cable Industry are both really on the same side of the environmental fence on the issue of protecting the seabed. Please accept our October 23 "Comments on the Advance Notice of Proposed Rulemaking" as constructive criticism, along with the Comments sent to you by the North American Submarine Cable Association ("NASCA"). As you will see in NASCA's Attachment 1, Global Photon is one of twelve telecommunications companies that participate. Due to logistical circumstances, the "Comments" enclosed here were not available to be hand-carried to you with the NASCA Comments. However, we would like to summarize certain points made in the NASCA Comments that are worthy of emphasis.

(1) NASCA Comments, pg. 2. "The continuing increase in demand is being offset by a continuing increase in cable carrying capacity."

It is our view that improvements in technology over the past 10 years demonstrate that increases in cable bandwidth/capacity more than "keeps pace with demand;" rather, the growth in deployed cable bandwidth is now *leading* the growth in demand for capacity.[1] The latter fact constrains the viability of any "business case" proposing installation of additional cable systems, and defeats the logic of the ANPRM's statement that "200 new cable systems with over 1,000 shore landings are projected by 2003." For example, recent discussions with the California State Lands Commission indicate that, in the wake of having processed and approved applications for five (5) undersea cable projects that arose during the February 1998 through November 1998 period of time; only two (2) undersea cable applications have subsequently been received during the past two years.[2] This issue is discussed further in our enclosed Comments, Section V, pg. 5-6. It was also discussed in the enclosure to a letter sent to David Festa, Department of Commerce, April 10, 2000.

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[1] George Gilder, Telecom: How Infinite Bandwidth Will Revolutionize Our World, The Free Press (NY, London, Toronto, Sydney, Singapore) 2000 [see Gilder's Law, pg. 265: "Bandwidth grows at least three times faster than computer power. While computer power doubles every eighteen months (Moore's Law), communications power doubles every six months"].

[2] Paul Thayer, Executive Director, California State Lands Commission (April 20, 2000); Kirk Walker, Environmental Project Manager, CSLC, phone conversation, October 17, 2000.

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(2) NASCA Comments, pg. 5: "Corridors that would require clustering of cables without considering the above security and maintenance needs would create great risks for ... the country as a whole. Submarine cables are a key component of the nation's critical telecommunications infrastructure."

It appears that NOAA may not be taking into account the Department of Commerce's mandate, under Executive Order No. 13010 (July 15, 1996) and Presidential Decision Directive No. 63 (May 1998), to establish a coordinated, national effort to protect the nation's critical telecom infrastructure against natural disasters and intentional attacks that could significantly disrupt the delivery of services vital to the nation's defense, economic security, and the health and safety of it people. The establishment of well-defined corridors, the location of which is placed into the public domain for ease of availability to terrorists or other enemies of the US, determined to disrupt national and/or international communication networks, is inimical to the goals of national security and the economic welfare of the nation.

In addition, as pointed out in the Comments of Flag Telecom (pg. 4), submitted with the NASCA Comments: "The inherent limitations imposed by a cable corridor policy promote a 'first in' approach which is contrary to the Telecommunications Act of 1996 policy of increasing and opening competition."

(3) NASCA Comments, pg. 5: "In several recently approved projects, burying to approx. 1 meter (3 feet) has been deemed sufficient to greatly reduce the probability of interaction with bottom-fishing gear."

The examples of California projects approved included China-US, Japan-US, Pacific Crossing, and Southern Cross. In addition, the Final Environmental Impact Report for Global West Fiber Optic Cable Project, SCH No. 9902167, EIR No. 692, Vol. I, II, and III, (2,000+ pages) was certified by the California State Lands Commission on April 20, 2000. This study included a detailed analysis of the "Penetration Depth of Fishing Gear," see Section 2.6.1.5 and Figure 2.6-1 on pages 2-26 and 2-27, respectively.

(4) NASCA Comments, pg. 6 : "Hard bottom areas generally preclude burial. ... In that case it is particularly important to work with local fishers to try to adjust the route if necessary to minimize adverse economic impacts."

The NASCA Comments reference that such adjustments to cable routes for China-US, Japan-US, Southern Cross, and Pacific Crossing were done in 1999. In addition, similar adjustments to two portions of the Global West Network cable route were undertaken in 2000 on behalf of the fishermen in Morro Bay and Santa Barbara. These adjustments will eliminate impacts to preferred fishing grounds.

(5) NASCA Comments, pg. 6: "For example, rerouting of the California cable projects described above to avoid hard-bottom areas was also designed to reduce impacts on the more significant species there."

The high-resolution side-scan sonar and bottom-profiling data collected for the Global West Fiber Optic Cable Project, as reported in the Final EIR, also enabled the cable route to avoid all potential "high-relief" regions—wherein, sensitive species may find habitats. The accuracy of this determination was further confirmed on the basis of subsequent ROV video studies conducted in all regions having the potential for rocky projections greater than 1 meter above the seafloor. By comparison of the high-resolution sonar data with the results of the ROV video data, it was discovered that the high-resolution sonar data was sufficiently accurate to determine the location of geophysical projections above the seafloor. Hence the geophysical data alone would have been sufficient to enable calculated avoidance of projections in the cable installation and burial plans; and consequently, to enable avoidance of the associated sensitive habitats during the actual cable deployment and installation.

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(6) NASCA Comments, pg. 7: "The ANPRM gives us cause for concern because it includes a number of statements that would seem to make sense *only if* NOAA presumed that submarine cables typically have a significant adverse impact on the marine environment or commercial fishing in NMS and elsewhere. The evidence is overwhelmingly to the contrary."

The above comment by NASCA is supported comprehensively in our enclosed Comments; in particular, see Section I (pg. 1-3), Section IV (pg. 5), and Section VI (pg. 6-7). It is pointed out that submarine cables have been laid in the marine environment for over 150 years with no substantive evidence that environmental harm has resulted. Over 1 million miles of submarine cables have been laid in the oceans throughout the world. It is only during the past 20 years, however, roughly the period of time over which fiber-optic cables have replaced their larger submarine coaxial predecessors, that technological advances in oceanographic survey instrumentation and ship navigation systems—including DGPS, GIS, high-resolution side-scan sonar, ROV video capabilities, etc.—have revolutionized our ability to know in advance the precise locations of potentially sensitive habitats. Further, advances in the engineering science of cable hydrodynamics and cable ship handling equipment, including computerized control the cable launch solution, have enabled cable ship Captain to confidently lay the cable precisely on the pre-planned route alignment; thus, avoiding and/or minimizing impact on environmentally sensitive features.

Let me emphasize that Global Photon Systems, over the short period of our existence and especially during the past three years, has made every effort to be environmentally responsible and to comply with all of local, state, and federal permitting requirements. Our Company was founded on the notion that innovative, environmentally sustainable, small-diameter *pure* fiber optic undersea cables, with no electrical power in the cable, could provide many commercial and environmental benefits. Our only project is the Global West Network, a small-diameter *pure* fiber optic cable proposed for the Coast of California to provide protection for the existing critical telecom infrastructure in the US101 terrestrial corridor. In practice, however, our only "product" during the past three years, since our original Scoping Meeting with the California State Lands Commission in November 1997, has been permitting applications, environmental studies, agency and public scoping meetings, and environmental documents. During the past 3 years, the expense for these activities is in the range of $10 million dollars—about $6.5 million for the preparation of the certified Final EIR referenced above and related environmental studies. These expenses included permitting, lobbying, environmental surveys and analysis, wages and employee compensation, and the publication of related environmental reports. It is hoped that in April 2001, we will finally be able to install and operate the Global West Fiber Optic Network, such that our *very first revenues* will commence.

The above facts regarding Global Photon Systems are related for one reason only: to underscore the point that the current "system" of local, state and national permitting and environmental regulations, as it applies to undersea cables in the marine environment, is in serious need of "streamlining and tailoring." In particular, due to the exigencies of state and national organizations having various jurisdictions and authorities over the coastal regions of the United States, the expertise and experience of environmentally conscious and responsible marine cable experts is being ignored, and new entry competitive telecoms like Global Photon are being suppressed in contravention of the Telecom Act of 1996.

For example, I personally have worked with undersea fiber optic cables in the marine environment off the coast of California for over twenty years. During that period of time, I have been involved in undersea fiber optic cable projects for the US Navy Department of Salvage, Naval Ocean Systems Center (San Diego and Hawaii Labs), Naval Civil Engineering Lab, Naval Underwater Systems Center (New London, CT), Department of Defense (Strategic Defense Initiative and Air Defense Initiative), Naval Facilities Engineering Command, Scripps Oceanographic Institute, Monterey Bay Aquarium Research Institute (on behalf of University of Hawaii Department of Geophysics), Woodshole Oceanographic Institute,

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and commercial fiber optic cable projects from San Diego to Seattle and Vancouver BC. I've participated in the research and development of undersea fiber optic cables, including their *in-situ* undersea testing and evaluation off Pt. Loma, San Clemente Island, Scripps Canyon, Pt. Hueneme Canyon, Santa Cruz Island Acoustic Range Facility (SCARF), Pt. Sur, Monterey Canyon, Pacific City OR, Pacific Beach WA, and the Straight of Juan de Fuca. In nearly every one of these projects, undersea videos were made of the *in situ* cables. Every one of those videos have demonstrated and confirmed the intrinsic compatibility of undersea cables with the marine environment.[3]

Taking into account the immense experience of the many scientists, engineers, geophysicists, oceanographers, and marine biologists with whom I have worked over the past twenty years, it is very difficult to understand the motivation for many of the particular items and general assumptions implicit in the ANPRM. In my personal opinion, if the "Proposed Rulemaking" follows the course charted in the ANPRM, many people, including scientists in particular and the entire population in general, will suffer a great setback. I cannot agree that it makes sense for well-educated and highly experienced undersea cable practitioners to remain silent while 'new rules' based upon ill conceived and unproven hypotheses are promulgated. If the marine environment were truly in jeopardy as a result of undersea fiber optic cable, I would be the first to admit it. However, after comprehensive environmental studies and review, there is no substantive evidence that supports this contention.

From the commercial perspective, it appears that NOAA on behalf of the US Department of Commerce may be poised to increase the complexity of legal and regulatory statutes surrounding cable projects planned for the coasts of the United States. If this results in any further increase in the uncertainty and/or the length of time required to obtain permits for the installation of undersea cables, it will make access to project finance essentially impossible. Of all the projects involved in the "Workshop on Fiber Optic Cables in the Marine Environment," hosted by David Festa, Senior Policy Advisor, Department of Commerce, the Global West Fiber Optic Cable is the *only* project wholly dependent upon equity contributions and project finance alone. For example, Global Photon, the project sponsor, is a "new entry competive telecom" whose revenues are dependent upon completing the network. Hence, we are the only undersea telecommunications entity, seriously testing the ability of the Telecommunications Act of 1996 to open up and increase the amount of competition in telecommunications.

I am sorry to report that our experience to date leads irrevocably to the conclusion, on the basis of having "tested the water" for over three years, that the current "system" of environmental permitting is incompatible with the goals and purposes of the Telecommunications Act of 1996. We sincerely hope that NOAA will take an objective and thoughtful look at this candid outline of our perspective, to insure that the "Proposed Rulemaking" takes advantage of an opportunity to simplify and streamline the environmental permitting process for fiber optic cables in the marine environment.

Finally, I would like to draw attention to Flag Telecom's discussion of "safe harbor" criteria, which is likely the only possible way to ensure a streamlined and orderly permitting process. For example, specific

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[3] See for example, "Preliminary Evaluation of Submarine Communications Cable as Reef Construction Material," by DeWitt O. Myatt, Maryland Department of Natural Resources, Reef Program, July 14, 1994. "Preliminary observations are very encouraging. The armored cable exhibits excellent habitat qualities for reef fish and motile invertebrates. Cable [stacked in] piles closely resemble designed fiberglass reinforced plastic units used very successfully by Japanese reef builders and our own program in the Chesapeake Bay. The material seems to be very stable and unlikely to be moved off the site by any other than extremely powerful natural or human influences (e.g. Earthquakes or nuclear detonations). Armored cable clearly meets criteria for Maryland ocean reef construction as a stable, non-polluting and biologically effective material when deployed in concentrated piles."

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"safe harbor" criteria should be developed for passing through a National Marine Sanctuary; and/or particular criteria should be developed for each respective Sanctuary or particular location therein. If "safe harbor" criteria are adopted, applicants can more easily evaluate for themselves whether or not a proposed application has reasonable prospects for success. For example, throughout one and one-half years of the Global West Fiber Optic Cable Project, it was believed on the basis of conversations with Sanctuary staff and other public officials that authorization to pass through a particular Sanctuary could be granted solely on the basis of receiving a permit from certain federal or state authorities of competent jurisdiction. It was not until the Environmental Impact Report (EIR) process under the California Environmental Quality Act was nearly complete that Sanctuary officials decided, notwithstanding the conclusions of the EIR, that an Environmental Impact Statement (EIS) under NEPA would also be required. This seemingly 'ad hoc' policy change nearly destroyed our Company. Furthermore, due to the inability of the NMS Program to establish and provide "significance criteria" in advance, it is still not possible for our Company to objectively evaluate whether or not pursuit of the EIS process under NEPA would reasonably result in authorization to pass through a particular NMS. With this degree of uncertainty surrounding the process, it is nearly impossible for any new entry competitive telecommunications company to secure the project financing necessary to sustain the EIS process under NEPA. Having the "safe harbor" significance criteria explicitly defined in advance of conducting a time-consuming and expensive EIS would save the project applicant, financial institutions, investors, and the government a significant amount of time and money. This would also better serve the purposes of individual and corporate taxpayers, whose hard-earned dollars support NOAA, the Department of Commerce, and all governmental institutions.

If you have any questions about the issues discussed in this letter or the enclosed comments, please do not hesitate to call me at 619-744-4057.

Very truly yours,

Tim Stamnitz
President/CEO

Enclosure
Comments of Global Photon Systems, Inc., on "Advance Notice of Proposed Rulemaking on Installing and Maintaining Commercial Submarine Cables in National Marine Sanctuaries," October 23, 2000 (8-pages)

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